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Unmet health needs in patients with coronary heart disease: implications and potential for improvement in caring services

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Abstract

Background: Improving the quality of health care services requires tailoring facilities to fulfil patients' needs. Satisfying patients' healthcare needs, listening to patients' opinions and building a closer provider-user partnership are central to the NHS. Few published studies have discussed cardiovascular patients' health needs, but they are not comprehensive and fail to explore the contribution of outcome to needs assessment.

Method: A comprehensive self-administered health needs assessment (HNA) questionnaire was developed for concomitant use with generic (Short Form-12 and EuroQOL) and specific (Seattle Angina Questionnaire) health-related quality of life (HRQL) instruments on 242 patients admitted to the Acute Cardiac Unit, Nottingham.

Results: 38% reported difficulty accessing health facilities, 56% due to transport and 32% required a travelling companion. Mean HRQOL scores were lower in those living alone ($P < 0.05$) or who reported unsatisfactory accommodation. Dissatisfaction with transport affected patients' ease of access to healthcare facilities ($P < 0.001$). Younger patients (<65 y) were more likely to be socially isolated ($P = 0.01$). Women and patients with chronic disease were more likely to be concerned about housework ($P < 0.05$). Over 65 s ($p < 0.05$) of higher social classes ($p < 0.01$) and greater physical needs ($p < 0.001$) had more social needs, correlating moderately ($0.32 < r < 0.63$) with all HRQL domains except SAQ-AS. Several HRQL components were highly correlated with the HNA physical score ($p < 0.001$).

Conclusions: Patients wanted more social (suitable accommodation, companionship, social visits) and physical (help aids, access to healthcare services, house work) support. The construct validity and intra-class reliability of the HNA tool were confirmed. Our results indicate a gap between patients' health needs and available services, highlighting potential areas for improvement in the quality of services.

Introduction

Medical professionals tend to focus on a medical model of health care. This ignores the more comprehensive approach which addresses 'the state of physical, mental and social well being'. Defining *health needs* is difficult, so it is not surprising that numerous definitions have been proposed in the past. Classifying needs in a sociologic environment as 'normative', felt', expressed', and 'comparative', remains one of the best, [1] despite its ignoring cost-effectiveness as a major determinant of healthcare provision. 'Ability to benefit from health care services' is a definition of 'needs'.[2] which minimises the role of lay individuals, focusing on 'health care' rather than 'health' [3] and is constrained by existing healthcare facilities. Additionally, benefit from healthcare may be affected inversely by the severity of disease.[4]

Geographic variations, socio-economic status and the knowledge base and attitude of the population may influence *demand* for health care, while medical guidelines and effectiveness of interventions may affect health care *availability*. Ideally, the provision of health care services should meet most of the populations' needs but these may not be constant, so health needs assessment (HNA) surveys are necessary both locally and nation-wide to establish what services are required to match these needs.

'Health needs' and 'healthcare needs'

'Health' covers a wide range of issues so '*health needs*' ought to include at least social care, accommodation, health care, finance, education, employment, leisure and transport. Even social facilities such as a bus service to reach health services, road safety regulations, clean air policies and occupational health fall under the *health need* banner. It is not possible to attain a state of full health in every instance, so the goal of healthcare needs is optimal state of health. Nevertheless, if primary care aims to improve health as well as prove health services, these factors should be identified as health-related issues and referred to other sectors for action. [5]

Advantages of health needs assessment

HNA as a key point in health system involves both public and professional in the decision-making process, increases service utilisation rates, provides a reliable platform on which to base decisions regarding the withdrawal of unnecessary services and has the potential to inform priority setting and primary care planning. [6]

HNA in patients with CAD

It is essential to consider patients' health care needs as determined by epidemiological, comparative and corporate approaches [7]; investigating patients perceptions; the cost-effectiveness of interventions; and the potential risks of *not* offering services for patients with coronary artery disease (CAD) such as increased hospitalisation, morbidity and mortality [8]. Results from other studies emphasise that offering care for patients with progressive cardiac illnesses is not currently based on their needs.[9]

The contribution of quality of life to HNA

Generic measures are necessary to provide an overview of current health status, to compare results among different populations with diverse socio-economic backgrounds, to compare interventions and to supply quantitative data for economic evaluation. [10] In patients with co-morbid illness, generic measures have considerable merit. Disease-specific measures however can detect subtle changes due to interventions, are sensitive to the disorder under investigation and may be more likely than generic tools to reflect clinical changes in that disorder. Consequently it is generally recommended that both generic and disease specific instruments are applied to cover all aspects of health-related quality of life. [11–14]

Method of study

General considerations

This descriptive cross-sectional study appraises the health needs of cardiac patients admitted to a coronary care unit following two qualitative and quantitative pilot studies. Overall 242 out of 260 patients (93%) who consented to participate in the survey returned the completed questionnaires after two reminders. All had symptoms suggestive for a myocardial infarction, diagnosed clinically based on the Nottingham Heart Attack Register guidelines. [15]

Method of administration

In the absence of an available tool for healthcare needs assessment of patients with CAD, we developed our own questionnaire, the Nottingham Health Needs Assessment (NHNA). The NHNA questionnaire was developed after a rigorous review of the literature, expert views, discussions with medical staff and patients and information compiled at patient interview. The NHNA covers demographic data, employment, mobility and transport, access to local heath care facilities, information needs and concerns, availability of carers, current health care, accommodation, education, leisure and social facilities.

A semi-structured interview was conducted on 45 patients to ensure that as broad a range of viewpoints over health care needs would be obtained. A pilot study was conducted in a selected non-randomised group of patients to develop and refine a novel questionnaire. Several wording and other amendments were made and some items were deleted after factor analysis to develop the final self-administered version.

Table 1: Nottingham Healthcare Needs Assessment questionnaire components

Domains	Items allocated	Mean score (SD)	Measure of skewness*	Cronbach's alpha	Corrected total-item correlation	Floor score (%)	Ceiling score (%)
Physical needs	8	3.64(0.93)	-2.58	0.88	0.59–0.85	1(0.4)	5 (2.1)
Satisfaction	11	4(0.76)	-4.53	0.87	0.55–0.75	1(0.4)	21 (8.7)
Informational needs	7	3.94(0.97)	-5.52	0.89	0.54–0.88	1(0.4)	14 (5.8)
Social needs	12	4.01(0.73)	-6.38	0.86	0.40–0.68	5(2.1)	3 (1.2)
Concerns	8	2.89(0.76)	0.37	0.83	0.50–0.79	1(0.4)	1 (0.4)

*Measures beyond ± 1.96 are significantly skewed at the level of 0.05.[28]

Developing the questionnaire

There are two major sorts of health care needs among patients with suspected myocardial infarction; first general health care needs, which should be similar to those with similar demographic and socioeconomic characteristics; and second, specific needs that are perhaps unique to this patient group. Quality of life information obtained from the same patients was used as a 'gold standard'.

Questionnaire content

To take account of all available sources of information apposite to HNA in cardiac patients, a questionnaire battery which included more than 80 items was devised, based on a 'trial and error' approach. Patients were asked to provide feed back on any item which could not be easily understood or was not applicable. The first draft of the questionnaire, issued to patients admitted to hospital to ascertain its clarity and compatibility to their perceptions of health needs, contained several open-ended questions to allow the patients to record perceived health needs in their own words. Several amendments were then made in light of patients' comments or special needs.

During the development of the instrument, it was felt important to avoid jargon, negative, ambiguity, biased, 'double negative' and complex questions. The number of open-ended questions was intentionally limited. Questions containing 'options' were refined to get clearer answers. The average question length was 12 words. All related questions were placed in appropriate groups and the layout optimised for 'user-friendliness', readability and responsiveness. The assessment tool, which consists of 48 questions in 5-score Likert scale (1 indicates more needs versus 5 with no needs) in five domains of 'physical needs, 'satisfaction', 'informational needs', 'social needs, and 'concerns' (table 1). A mean score in each domain was computed to enable further calculations and comparisons with other variables.

Demographic and a few specific questions such as the type of accommodation, intention or desire to move, attitude to health checks and the private health care sector were added. Following factor analysis, two of the 48 questions were removed. The first dealt with patients overall health perception during the preceding year (health transition). The second sought information about concerns regarding the threat of unemployment.

Seattle Angina Questionnaire (SAQ)

The SAQ has well-established psychometric properties, measures broader aspects of the effects of coronary disease than other disease-specific tools and can detect physical limitations due to coronary disease. It is particularly useful in the presence of co-morbidity [16] corresponding well with the Canadian Cardiovascular Society Classification [17]. The SAQ consists of 19 items grouped in five components: *physical functioning* (SAQ Phys), *angina stability* (AS), *angina frequency* (AF), *treatment satisfaction* (TS), and *QOL perception* (SAQ QOL).

Short Form 12 (SF-12)

The SF-12 is an abridged form of the better-known Short Form 36 (SF-36) [18] which has produced consistent results in several European countries and in a diverse range of conditions. It contains 12 questions from which are derived physical and mental component scores (PCS & MCS); these are as precise as the SF-36. [19,20]

EuroQOL (EQ-5D)

The EuroQol questionnaire (EQ-5D) defines health in terms of five dimensions: *mobility*, *self-care*, *usual activities*, *pain* or *discomfort*, and *anxiety* or *depression* in a three degree format that is 'no problem', 'moderate' and 'severe'. Another question deals with overall health in a scaling (0–100) format. The validity and reliability of the EQ-5D questionnaire have been tested in a range of patient groups. [21,22] There is a strong correlation between the EQ-5D and the SF-12 in adults,[23] but to our knowledge, there has been no published study of the EQ-5D in suspected or confirmed myocardial infarction.

Statistical analysis

SPSS version 11.0 was used for statistical purposes, using descriptive and correlation analysis, comparison of

Table 2: General information

Variable		N	Percent
Age group	=<54	29	12
	55–64	47	20
	65–74	73	30
	75–84	67	28
	>=85	23	10
Gender	Female		
	Male	143	
Education level	School certificate	23	10
	Left at age<16	146	66
	"O" or "A" level	14	6
	College or higher	39	18
Occupation	Retired	194	80.5
	Unemployed	15	6
	Full-time	24	10
	Part-time	8	3
Diagnosis	Definite MI	27	11
	Possible MI	34	14
	IHD	152	64
	Chest pain	26	11
Social class	I	3	1
	II	35	16
	III non-manual	31	14
	III manual	62	28
	IV	71	32
	V	21	9
Type of accommodation	House	133	55
	Flat	30	12
	Bungalow	75	31
	Nursing & park home	4	2
Live alone	Yes	76	31
	No, with Spouse	153	63
	No, with Children and others	13	6
Home satisfaction	dissatisfied	59	25
	satisfied	181	75
Intention to move	No	177	78.0
	Yes	50	22.0

means, analysis of variance and multivariate (MANOVA), reliability and non-parametric (Mann-Whitney) tests where indicated. Several contingency tables were formed to look for significant correlation and chi-square test was used to measure the association between variables. As the majority of variables were in scaling format, Spearman rho was used to detect correlation, which was considered significant at $p < 0.05$. This survey was approved by the Local Ethical Committee.

Results

Demographic data

242 patients (59% male) returned the completed questionnaires. Ages ranged between 31–93 years (mean = 69.7, 95% CI: 68.2,71.2). Seventy-one percent (n = 169) left school at age 16 or less and 21% (= 53) completed higher education. Table 2 describes the major demographic characteristics of all but 3 patients. Social class, derived from the last occupation, was determined in 223 patients. [24] 69 (31%) had non-manual and 154 (69%) manual jobs (table 2). Health status, in terms of QOL scores, is discussed below but generally women had lower mean scores in all QOL domains, which reached statistical significance in SAQ-AS and PCS (SF-12). ($t = -2.04$ and $t = -1.99$ respectively, $P < 0.05$) Patients over 65 years old had worse QOL scores in several domains of the three QOL tools. ($P < 0.001$)

Occupation

Patients were questioned about their current occupation and whether they had changed their job as a result of their illness; most were retired (Table 2). "Changes in patients'

occupational status" did not correlate with diagnosis (P = 0.72), nor with gender, social class and education level, but apparently younger patients (<65 y) were more susceptible to change their job as a result of ill health. (P < 0.01) The unemployed were more likely to have changed jobs in the previous year (P < 0.01). Various components in EQ-5D, SAQ physical and PCS correlated significantly with both variables (p < 0.001). Patients who altered their job as a result of their health had a lower mean score in all QOL domains except SAQ treatment satisfaction. (MANOVA: F = 7.14–17.65, P < 0.01– < 0.001 in all domains except SAQ TS)

Home Circumstances

31% lived alone, women more so than men (41% female versus 24% male). These patients reported lower scores in all QOL domains, but this was significant only in SAQ physical domain (t = -2.1, P < 0.05). Satisfaction with current accommodation was not related diagnosis, comorbid illness or social class, but one-third of patients with psychological and respiratory disorders were unhappy with their accommodation (38% and 33% respectively).

Mean QOL scores were lower in patients who lived alone compared with others, significant in SAQ physical domain (mean 46.5 *v* 55.5, t = -2.17 P < 0.05). QOL was affected by intention to move, most significant in SAQ QOL and MCS (P < 0.001). Patients who were completely satisfied with accommodation perceived better health (mean MCS = 40.5) compared with those who were dissatisfied (mean MCS = 47.9, t-test = -4.5, P < 0.001). Patients who wished to move to a more suitable house had worse QOL (mean MCS = 40.5 *v* 48, P < 0.001).

Transport

Women were more likely to complain about transport. Dissatisfaction with means of transport affected patients' ease of access to healthcare facilities in both sexes (P < 0.001). Among patients who had difficulty in accessing healthcare facilities (N = 93; 38%) transport was their chief complaint. Those who relied upon public services and someone else's vehicle were more likely to be dissatisfied (P < 0.001).

Social support

Social activities were limited. 19% had no hobby, which was not related to age, sex, social class, diagnosis, or comorbidity. 24% went out socially less than once per month; younger patients were less likely to have an active social life (P = 0.01). 29% felt that illness prevented their taking up or continuing a hobby. All were related to QOL. (Table 3)

35% patients required financial support; younger more so than older patients (P < 0.001; OR = 1.4, CI: 1.12,1.77). Younger patients (<65 y) and manual workers were more concerned about financial assistance (t = 2.99 and -2.72 respectively, P < 0.01). One third of patients sought help with household cleaning chores and for social contacts and one-fifth wanted regular visits by a social or other worker. Patients with co-morbidity were more likely to require help with cleaning (P < 0.05; OR = 2.5 CI: 1.1,5.4).

30% assumed that seeing friends might help them to better deal with and overcome their illness; retired and unemployed were 10 times more likely to have unmet social needs. (P < 0.001; OR = 10.4, CI: 1.5,74). Comorbidity increased the likelihood of wanting social help (P = 0.01; OR = 3 CI: 1.1,7.9). Women and IHD patients were more likely to be concerned about help with cleaning (t = 2.85 and -2.35, P < 0.01 and <0.05 respectively).

Help needs

119 patients expressed a need for care, which was related to diagnosis (P < 0.01). 18% of patients who needed a carer (= 21) had no support. Women were particularly vulnerable (P < 0.001); 10 out of 51 patients who needed a carer had nobody to support them. Patients were questioned whether their helpers were happy to continue caring; 42% (n = 47) were concerned their helpers might have to discontinue helping. Patients who already benefited from a helper at home and patients who requested a helper had significant lower HRQL and HNA scores. Patients with no company at home had more physical and social needs (p < 0.01) and impaired HRQL (p < 0.05). (Table 5)

Overall social needs

To gain an overall estimation of health needs in social domain a score for each patient was calculated. Patients over 65 years (p < 0.05) and with higher social classes (p < 0.01) had more social needs but there was no significant difference among gender, education nor their diagnosis. Patients with higher physical needs had apparently more social needs, too (p < 0.001). Social needs score was low to moderately (0.32 < r < 0.63) correlated with all (except SAQ-AS) domains in HRQL tools. (Table 3)

Overall physical needs

Similarly an individual score was computed for each patient to demonstrate the overall physical aids and its association with HRQL scores. Table 4 shows that the SAQ physical component, Physical Component Score in SF-12, and the visual analogue scale in the EQ-5D are all highly (correlation coefficient more than 0.70) correlated with the HNA physical score (p < 0.001). More physical needs were detected in elderly (p < 0.01) and ischaemic patients (p < 0.05) compared with confirmed MI. No gender difference was observed in physical needs.

Table 3: Correlation between social needs and HRQL components

	EQ-Mob	EQ-SC	EQ-UA	EQ-PD	EQ-AD	EQ-VAS	SAQ Phys	SAQ AS	SAQ AF	SAQ TS	SAQ QOL	PCS	MCS
Social class	**.18**	.08	.09	**.24**	.05	**-.22**	-.13*	-.01	-.06	.01	-.15*	-.11	-.12
Feel satisfied with your accommodation?	**-.19**	-.05	-.12	-.06	**-.25**	**.17**	.15	.04	**.18**	**.28**	**.24**	.06	**.28**
Happy using this means of transport?	**-.26**	**-.16**	**-.25**	**-.23**	**-.35**	**.28**	**.34**	.13*	**.24**	**.33**	**.34**	**.29**	**.33**
How often go out socially?	**-.17**	**-.17**	**-.20**	-.12*	**-.20**	**.17**	**.24**	.15*	.15*	.02	.13*	**.19**	**.25**
Any difficulty getting Health Centre?	**-.39**	**-.45**	**-.43**	**-.32**	**-.41**	**.44**	**.48**	**.24**	**.26**	.15*	**.32**	**.50**	**.38**
Concerning give up job because of health	-.16	**.30**	-.22*	**-.33**	-.23*	.12	.13	.20	.16	.18	.21*	.16	**.38**
Your helper is happy to continue?	-.10	**-.27**	-.19*	-.13	**-.39**	.21*	**.36**	.21*	**.29**	**.31**	**.37**	.22*	**.44**
Looking after you causes problems for helper?	**-.23**	**-.38**	**-.37**	-.15	**-.29**	**.29**	**.40**	**.24**	**.30**	**.28**	**.30**	**.30**	**.44**
Need help to get out and about?	**-.28**	**-.42**	**-.33**	**-.27**	**-.25**	**.31**	**.39**	.08	.14*	**.27**	**.28**	**.39**	**.26**
Need financial help?	**-.30**	**-.31**	**-.32**	**-.20**	**.34**	**.38**	**.38**	.14*	.15*	**.33**	**.31**	**.34**	**.46**
Need seeing friends more?	**-.29**	**-.32**	**-.31**	**-.32**	**-.40**	**.37**	**.44**	.06	**.17**	**.28**	**.31**	**.41**	**.42**
Need visiting from Social worker?	**-.29**	**-.33**	**-.29**	**-.26**	**-.28**	**.36**	**.43**	.16*	**.19**	**.28**	**.22**	**.33**	**.39**
Need better housing?	**-.29**	**-.21**	**-.30**	**-.22**	**-.33**	**.32**	**.29**	.02	**.25**	**.36**	**.33**	**.23**	**.41**
Mean Social Needs score in HNA	**-.44**	**-.41**	**-.48**	**-.36**	**-.54**	**.50**	**.55**	**.19**	**.32**	**.37**	**.45**	**.49**	**.63**

* indicates P < 0.05 and boldface < 0.01

Table 4: Correlation between physical needs and HRQL components

	EQ-Mob	EQ-SC	EQ-UA	EQ-PD	EQ-AD	EQ-VAS	SAQ Phys	SAQ AS	SAQ AF	SAQ TS	SAQ QOL	PCS	MCS
Illness stops your hobbies?	**-.40**	**-.25**	**-.48**	**-.44**	**-.34**	**.52**	**.53**	**.19**	**.35**	**.28**	**.47**	**.59**	**.41**
Your health prevents you going out?	**-.53**	**-.48**	**-.51**	**-.49**	**-.41**	**.59**	**.66**	**.20**	**.36**	**.24**	**.45**	**.67**	**.34**
Have problems getting around	**-.56**	**-.49**	**-.56**	**-.57**	**-.37**	**.62**	**.66**	**.28**	**.28**	.16*	**.43**	**.67**	**.38**
Need anyone look after you?	**-.45**	**-.63**	**-.51**	**-.43**	**-.35**	**.59**	**.62**	**.19**	**.23**	.12	**.31**	**.60**	**.34**
Need any equipment for daily activities?	**-.41**	**-.45**	**-.38**	**-.38**	**-.24**	**.41**	**.51**	**.19**	**.19**	**.21**	**.25**	**.41**	**.29**
Moving concern?	**-.62**	**-.61**	**-.64**	**-.56**	**-.45**	**.62**	**.71**	**.26**	**.35**	**.19**	**.48**	**.71**	**.46**
Need cleaning help?	**-.32**	**-.34**	**-.37**	**-.26**	**-.30**	**.39**	**.48**	.13	**.21**	**.33**	**.21**	**.45**	**.36**
Need getting out help?	**-.39**	**-.41**	**-.46**	**-.34**	**-.50**	**.49**	**.55**	.13	**.25**	**.26**	**.34**	**.52**	**.46**
Mean Physical Needs score in HNA	**-.59**	**-.60**	**-.62**	**-.56**	**-.48**	**.69**	**.76**	**.26**	**.35**	**.29**	**.45**	**.75**	**.48**

* indicates P < 0.05 and boldface < 0.01

Discussion

The medical model of health care has led to major improvement in health in the Western world but resolving the clinical aspects of an illness ignores the impact on quality of life in the patient's social context, generating unmet need. We identified several areas which warrant further investigation and implications for clinical practice. Accommodation was a major concern for many, adversely affecting health-related quality of life in one in five patients, independent of age and diagnosis or existing house size. Social problems were common but two in particular are worthy of attention. First, living alone created difficulties. This is a timely reminder that the family environment should be considered when medical treatment is offered. [25] Second was social isolation, a major psycho-

Table 5: Comparing HRQL and HNA domains means in various help needs

		EQ-Mob	EQ-SC	EQ-UA	EQ-PD	EQ-AD	EQ-VAS	SAQ Phys	SAQ AS	SAQ AF	SAQ TS	SAQ QOL	PCS	MCS	HNA phys	HNA Sat	HNA Info	HNA Soc	HNA Con
company	MW-U	5483	5751	5237	5779	5707	5688	4659	5310	5677	5147	5828	4617	4442	4441	5870	5795	4783	6242
	Z	-1.60	-1.09	-1.80	-.83	-.90	-.62	-2.30*	-.77	-.16	-.79	-.25	-1.02	-1.43	**-3.56**	-.86	-1.02	**-3.01**	-.13
Help needs	MW-U	4103	4163	3303	3779	4619	2500	2315	5629	4897	5348	4434	2052	3895	941	5899	4866	3215	3579
	Z	**-6.65**	**-7.51**	**-7.70**	**-6.80**	**-5.00**	**-8.40**	**-8.51**	-2.37*	**-3.53**	-1.99*	**-4.50**	**-8.34**	**-4.39**	**-11.56**	-2.22*	**-4.20**	**-7.28**	**-6.59**
Looking after patients	MW-U	4750	5060	4782	5320	5485	4184	3357	6207	5787	6295	5695	3153	4693	2742	7243	6461	4974	4860
	Z	**-5.39**	**-5.30**	**-4.78**	**-3.71**	**-3.36**	**-5.30**	**-6.65**	-1.16	-2.01*	-.29	-2.32*	**-5.97**	**-2.66**	**-8.29**	-.03	-1.48	**-4.22**	**-4.43**

Boldface indicates $p < 0.001$ and *<0.05

logical factor that has been acknowledged as important aid to survival following an acute myocardial infarction, particularly in vulnerable groups like elder patients or women. [9,26] One-third of our patients assumed that a wider social circle might help them to cope with and better overcome their illness. Being in employment facilitates social contact, and our non-working groups, whether retired or not were 10 times more likely to request improved social communication. In this respect, attendance at post-myocardial infarction rehabilitation groups assumed greater importance, especially for lower socio-economic groups who are notoriously poor at accepting invitations for cardiac rehabilitation; [27] in addition, the role of the traditional outpatient appointment becomes more important for some as a social rather than medical event. Overall individual patients' social needs and physical needs scores correlated "moderate to high" [28] with all HRQL components, which supports the construct validity of the needs assessment questionnaire.

The impact of socio-economic status on health, as well as on equity of access [29] have been known for many years. [30] In line with other reports [29], knowing how to get the best out of the medical services and gaining access to healthcare facilities, particularly gaining information about illness or discussing concerns about diagnosis or prognosis, is directly related to socio-economic status. The impact of socio-economic status, although not universal,.[31] highlights the difficulty of ensuring equity of access to standard care for everyone in the community. One way to tackle this is to identify vulnerable patients and communities and target these.

We confirmed age and gender differences in health related quality of life reported by others. [32] Quality of life was perceived to be worse in older patients. In addition to gender variations in etiological factors and the well-known excess of coronary heart disease in men, differences in access to diagnostic and treatment procedures have been reported. [33] Our results – similar to other studies[34] – indicate that women had worse quality of life in all domains, which *per se* contribute to lower survival chances. Women also required more help needs and social support consistent with evidence from other studies. [25,35]

The needs expressed by our patient population identifies areas for potential improvements in health care that are usually not directly related to physical conditions and therefore are generally ignored by healthcare professionals. If assessing needs leads to genuine change in the current healthcare services [36] where health is the ultimate concept of well-being, meeting social, physical, transport and housing needs ought to provide a more comprehensive health care, and improve the outcome, for patients.

Establishing need presents problems and the Nottingham Health Needs Assessment was developed for this study because health needs analysis is a relatively new approach to ascertaining attitudes to health and so there was no 'off the shelf' valid and reliable needs assessment instrument available for cardiac patients. The tool, however, showed acceptable psychometric properties (table 1) and therefore we propose to test this instrument more widely to assess its generalisability against a background of a wide range of patient demography, illnesses and socio-economic and geographic settings.

Based on an analysis of a pilot study and experience gained in routine clinical visits, we had expected that our patients might have common social health needs as well as specific health needs relating to their illness. What surprised us was the depth of the underlying current of major deficiencies in social or health service provision which generated considerable dissatisfaction with quality of life, despite satisfactory resolution of presenting symptoms. Resolving social and environmental issues remains an important issue in the era of ever-increasing medical technology, not least in coronary heart disease.

References

1. Bradshaw J: **A taxonomy of social need** *Problems and progress in medical care: essays on current research, 7th series* Edited by: *Mclachlan G. Oxford, Nuffield Provincial Hospital Trust*; 1972.
2. Stevens A and Gabbay J: **Needs assessment needs assessment** *Health Trends* 1991, **23:**20-23.
3. James M: **Towards an integrated needs and outcome framework** *Health Policy* 1999, **46:**165-177.
4. Robinson J and Elkan R: **Health needs assessment, theory and practice** *New York, Churchill Livingstone*; 1996.
5. Wilkinson JR and Murray SA: **Health needs assessment - Assessment in primary care: practical issues and possible approaches** *BMJ* 1998, **316:**1524-1528.
6. Ruta DA, Duffy MC, Farquharson A, Young AM, Gilmour FB and McElduff SP: **Determining priorities for change in primary care: the value of practice-based needs assessment** *Br J Gen Pract* 1997, **47:**353-357.
7. Stevens A and Gillam S: **Needs assessment: from theory to practice** *BMJ* 1998, **316:**1448-1452.
8. Herlitz J, Hjalmarson A, Karlson BW and Nyberg G: **Long-term morbidity in patients where the initial suspicion of myocardial infarction was not confirmed** *Clin Cardiol* 1988, **11:**209-214.
9. Murray SA, Boyd K, Kendall M, Worth A, Benton TF and Clausen H: **Dying of lung cancer or cardiac failure: prospective qualitative interview study of patients and their carers in the community** *BMJ* 2002, **325:**929.
10. Patrick DL and Deyo RA: **Generic and disease-specific measures in assessing health status and quality of life** *Med Care* 1989, **27:**S217-32.
11. Engstrom CP, Persson LO, Larsson S and Sullivan M: **Health-related quality of life in COPD: why both disease-specific and generic measures should be used** *Eur Respir J* 2001, **18:**69-76.
12. Guyatt GH, Bombardier C and Tugwell PX: **Measuring disease-specific quality of life in clinical trials** *CMAJ* 1986, **134:**889-895.
13. Guyatt GH, Veldhuyzen Van Zanten SJ, Feeny DH and Patrick DL: **Measuring quality of life in clinical trials: a taxonomy and review** *CMAJ* 1989, **140:**1441-1448.
14. Wiklund I and Karlberg J: **Evaluation of quality of life in clinical trials. Selecting quality-of-life measures** *Control Clin Trials* 1991, **12:**204S-216S..
15. Gray D and Hampton JR: **Twenty years' experience of myocardial infarction: the value of a heart attack register** *Br J Clin Pract* 1993, **47:**292-295.
16. Spertus JA, Winder JA, Dewhurst TA, Deyo RA and Fihn SD: **Monitoring the quality of life in patients with coronary artery disease** *Am J Cardiol* 1994, **74:**1240-1244.
17. Dougherty CM, Dewhurst T, Nichol WP and Spertus J: **Comparison of three quality of life instruments in stable angina pectoris: Seattle Angina Questionnaire, Short Form Health Survey (SF-36), and Quality of Life Index-Cardiac Version III** *J Clin Epidemiol* 1998, **51:**569-575.
18. Brazier JE, Harper R, Jones NM, O'Cathain A, Thomas KJ, Usherwood T and Westlake L: **Validating the SF-36 health survey questionnaire: new outcome measure for primary care** *BMJ* 1992, **305:**160-164.
19. Gandek B, Ware JE, Aaronson NK, Apolone G, Bjorner JB, Brazier JE, Bullinger M, Kaasa S, Leplege A, Prieto L and Sullivan M: **Cross-validation of item selection and scoring for the SF-12 Health Survey in nine countries: results from the IQOLA Project. International Quality of Life Assessment** *J Clin Epidemiol* 1998, **51:**1171-1178.
20. Jenkinson C, Layte R, Jenkinson D, Lawrence K, Petersen S, Paice C and Stradling J: **A shorter form health survey: can the SF-12 replicate results from the SF-36 in longitudinal studies?** *J Public Health Med* 1997, **19:**179-186.
21. Kind P, Dolan P, Gudex C and Williams A: **Variations in population health status: results from a United Kingdom national questionnaire survey** *BMJ* 1998, **316:**736-741.
22. van Agt HM, Essink-Bot ML, Krabbe PF and Bonsel GJ: **Test-retest reliability of health state valuations collected with the EuroQol questionnaire** *Soc Sci Med* 1994, **39:**1537-1544.
23. Johnson JA and Coons SJ: **Comparison of the EQ-5D and SF-12 in an adult US sample** *Qual Life Res* 1998, **7:**155-166.
24. **Standard occupational classification / Office for National Statistics.** *London, Stationery Office*; 2000.
25. Janz NK, Janevic MR, Dodge JA, Fingerlin TE, Schork MA, Mosca LJ and Clark NM: **Factors influencing quality of life in older women with heart disease** *Med Care* 2001, **39:**588-598.
26. Mendes de Leon CF, Dilillo V, Czajkowski S, Norten J, Schaefer J, Catellier D and Blumenthal JA: **Psychosocial characteristics after acute myocardial infarction: the ENRICHD pilot study. Enhancing Recovery in Coronary Heart Disease** *J Cardiopulm Rehabil* 2001, **21:**353-362.
27. Melville MR, Packham C, Brown N, Weston C and Gray D: **Cardiac rehabilitation: socially deprived patients are less likely to attend but patients ineligible for thrombolysis are less likely to be invited** *Heart* 1999, **82:**373-377.
28. Munro HB: **Statistical methods for health care research** 4th edition. *Philadelphia, Lippincott Williams & Wilkins*; 2001.
29. Richards H, McConnachie A, Morrison C, Murray K and Watt G: **Social and gender variation in the prevalence, presentation and general practitioner provisional diagnosis of chest pain** *J Epidemiol Community Health* 2000, **54:**714-718.
30. Townsend P, Whitehead M and Davidson M: **Inequalities in health** 2ndth edition. *London, Penguin*; 1992.
31. Finkelstein MM: **Do factors other than need determine utilization of physicians' services in Ontario?** *CMAJ* 2001, **165:**565-570.
32. Ades PA, Savage PD, Tischler MD, Poehlman ET, Dee J and Niggel J: **Determinants of disability in older coronary patients** *Am Heart J* 2002, **143:**151-156.
33. Majeed FA and Cook DG: **Age and sex differences in the management of ischaemic heart disease** *Public Health* 1996, **110:**7-12.
34. Varvaro FF, Olds NB, Zullo TG and Murali S: **Determining Quality of Life in Older and Younger Women With Congestive Heart Failure and Myocardial Infarction** *Am J Geriatr Cardiol* 1999, **8:**15-20.
35. Loose MS and Fernhall B: **Differences in quality of life among male and female cardiac rehabilitation participants** *J Cardiopulm Rehabil* 1995, **15:**225-231.
36. Hawe P: **Needs assessment must become more change-focused** *Aust N Z J Public Health* 1996, **20:**473-478.